

E.O. Book

State of California  
AIR RESOURCES BOARD

EXECUTIVE ORDER A-13-32  
Relating to Certification of New Motor Vehicle Engines

CATERPILLAR TRACTOR COMPANY

Pursuant to the authority vested in the Air Resources Board by Sections 43100, 43102, and 43103 of the Health and Safety Code; and

Pursuant to the authority vested in the undersigned by Sections 39515 and 39516 of the Health and Safety Code and Executive Order G-45-3;

IT IS ORDERED AND RESOLVED: That the following Caterpillar Tractor Company 1981 model-year diesel engines are certified for use in motor vehicles with a manufacturer's gross vehicle weight rating greater than 8500 pounds:

<u>Engine Family</u>	<u>Displacement Cubic Inches (Liters)</u>	<u>Exhaust Emission Control Systems (Special Features)</u>
12	1099 (18.0)	Engine Modification (Turbocharger, Aftercooler)
13	636 (10.4)	Exhaust Gas Recirculation
14	638 (10.5)	Engine Modification (Turbocharger, Aftercooler)
16-Code C	893 (14.6)	Engine Modification (Turbocharger, Aftercooler)

Engine Models and Codes as listed on attachments.

Section 43200, Part 5, Division 26 of the California Health and Safety Code requires that the engine manufacturer furnish a decal with each engine sold or delivered to a vehicle manufacturer. The decal shall display the applicable model year heavy-duty engine exhaust emission standards and the following certification emission values:

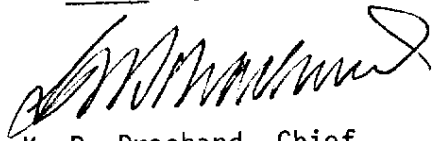
<u>Engine Family</u>	<u>Hydrocarbons gm/bhp-hr</u>	<u>Carbon Monoxide gm/bhp-hr</u>	<u>Hydrocarbons + Nitrogen Oxides gm/bhp-hr</u>
12	0.1	1	4.8
13	0.6	6	5.4
14	0.2	2	5.4
16-Code C	0.4	2	4.5

BE IT FURTHER RESOLVED: That Caterpillar Tractor Company has provided to the Executive Officer all material required to demonstrate certification compliance with the Board's emission control system warranty regulations (Title 13, California Administrative Code, Section 2036).

Engines certified under this Executive Order must conform to all applicable California emission regulations.

The Bureau of Automotive Repair will be notified by copy of this order and attachment.

Executed at El Monte, California this 27<sup>th</sup> day of June, 1980.



K. D. Drachand, Chief  
Mobile Source Control Division

# 1981 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET

Manufacturer Caterpillar Executive Order No. A-13-32 Page 1  
 Engine Family see below Evaporative Family n/a  
 ABBREVIATIONS Engine CID (Liters) -

## Ignition System

CA-Centrifugal Advance  
 EEC-Electronic Engine Control  
 EI-Electronic Ignition  
 ESAC-Electronic Spark Advance Control  
 VA-Vacuum Advance  
 VR-Vacuum Retard

## Exhaust Emissions Control System

AIP-Air Injection-Pump  
 AIV-Air Injection-Valve  
 CL-Closed Loop  
 EGR-Exhaust Gas Recirculation  
 EM-Engine Modification  
 OC-Oxidation Catalyst System  
 TR-Thermal Reactor  
 TWC-Three Way Catalyst System

## Special Features

CCV-Combustion Chamber Valve  
 CFI-Central Fuel Injection  
 DI-Diesel Injection  
 EFI-Electronic Fuel Injection  
 MFI-Mechanical Fuel Injection  
 TC-Turbocharged  
 AC-Aftercooler

## Fuel System

CFI, DI, EFI, MFI  
 nV-nVenturi Carburetor  
 VV-Variable Venturi

## Engine Family

## Engine Model

12	3408
13	3208
14	3306
16-Code C	3406

1981 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET  
HEAVY-DUTY DIESEL ENGINES

Manufacturer Caterpillar Tractor Company Page 2  
 Engine Family 12 Model 3408 CID (Liter)-Type 1099 (18.0) V8  
 ECS (Special Features) EM (TC, AC)

Engine Model	Fuel Injection Pump Mfr. Part Number	Injector Mfr. Part Number	Maximum Rated HP and RPM	Fuel Rate at Maximum HP mm <sup>3</sup> /stroke	Label Ident.
3408	Caterpillar 9N3316	Caterpillar 7N9843	450 @ 2100	191	9N6066
			425 @ 2100	179	
			400 @ 2100	169	
			425 @ 1950	191	
			400 @ 1950	179	

Date of Issue -

1981 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET  
HEAVY-DUTY DIESEL ENGINES

Manufacturer Caterpillar Tractor CompanyPage 3Engine Family 13 Model 3208CID(Liter)-Type 636 (10.4) V8ECS(Special Features) EGR

Engine Model	Fuel Injection Pump Mfr.  Part Number	Injector Mfr.  Part Number	Maximum Rated HP and RPM	Fuel Rate at Maximum HP mm <sup>3</sup> /stroke	Label Ident.
3208	Caterpillar 9N2431 or 9N5178	Caterpillar 9N3979 or 1W5829*	200 @ 2800	63	9N6036
			175 @ 2800	54	

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\*Revised - 08/06/81 - Injector nozzle P/N

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HEAVY-DUTY DIESEL ENGINES

Manufacturer Caterpillar Tractor Company

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Engine Family 14

CID(Liter)-Type 638 (10.5) I6

ECS(Special Features) EM (TC, AC)

Engine Model	Fuel Injection Pump Mfr.  Part Number	Injector  Mfr.  Part Number	Maximum Rated HP and RPM	Fuel Rate at Maximum <sup>3</sup> HP mm <sup>3</sup> /stroke	Label Ident.
3306	Caterpillar 9N2885	Caterpillar 9N2845	270 @ 2200	148	9N6034
	9N2886		270 @ 2100	154	
			245 @ 2200	134	

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1981 AIR RESOURCES BOARD SUPPLEMENTAL DATA SHEET  
HEAVY-DUTY DIESEL ENGINES

Manufacturer Caterpillar Tractor Company Page 5  
 Engine Family 16-Code C CID(Liter)-Type 893 (14.6) 16  
 ECS(Special Features) EM (TC, AC)

Engine Model	Fuel Injection Pump Mfr. Part Number	Injector Mfr. Part Number	Maximum Rated HP and RPM	Fuel Rate at Maximum HP mm <sup>3</sup> /stroke	Label Ident.
3406	Caterpillar 9N6355 or 9N6102*	Caterpillar 9L6884	380 @ 2100	210	9N6035
			300 @ 2100	166	
			300 @ 1900	177	
			350* @ 1800	214*	

Date of Issue -06/27/80

\*Revised -06/12/81( ) Fuel pump group only

\*\* -10/23/81:9/17/81 Add'n of new derating